

We claim:

1. A process for the preparation of methyl formate by reacting
5 methanol with carbon monoxide at a pressure of from 0.5 to
10 MPa abs. in the presence of a metal alkoxide as catalyst
in a reactor, in which a gas stream is withdrawn from the
reactor, entrained methyl formate is removed from this gas
stream by condensation, and all or some of the remaining gas
10 stream is returned to the reactor as circulating-gas stream,
which comprises setting a mean gas superficial velocity of
from 1 to 20 cm/s in at least one region of the reactor in
which the gas flows essentially in one direction, using
potassium methoxide as catalyst and carrying out the reaction
15 at a temperature of from 60 to 85°C.
2. A process as claimed in claim 1, wherein a mean gas
superficial velocity of from 2 to 10 cm/s is set in at least
20 one region of the reactor in which the gas flows essentially
in one direction.
3. A process as claimed in either of claims 1 and 2, wherein the
reaction is carried out at a concentration of catalyst
employed of from 0.01 to 2 mol/kg of liquid reaction mixture.
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4. A process as claimed in any one of claims 1 to 3, wherein the
reaction is carried out at a pressure of from 2 to 4 MPa abs.
5. A process as claimed in any one of claims 1 to 4, wherein a
30 molar ratio between the total amount of methanol fed to the
reactor and the amount of freshly supplied carbon monoxide of
from 1.4 to 3.3 is set.
6. A process as claimed in any one of claims 1 to 5, wherein a
35 bubble column is employed, and this is operated under
co-current conditions with respect to the feed of the
methanol-containing liquid stream and the carbon
monoxide-containing gas stream.
- 40 7. A process as claimed in any one of claims 1 to 6, wherein the
reaction is carried out in a cascaded reactor.
8. A process as claimed in claim 7, wherein the uppermost zone
45 of the cascaded reactor is operated at a temperature of from
80 to 150°C.